

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (currently amended) Method for determining the speed of a transmission member in a hybrid electric powertrain, said powertrain including a hybrid transmission having at least one electric motor operatively coupled to said transmission member and at least one rotation sensor for operatively sensing rotation of said ~~preselected~~ transmission member, comprising:

providing a first signal indicative of the speed of said transmission member calculated from the output from said at least one rotation sensor;

providing a second signal indicative of the speed of said transmission member calculated from electrical phase information of said at least one electric motor and an effective rotation ratio between the transmission member and said at least one electric motor; and, selecting as the speed of the transmission member said second signal when predetermined conditions indicate that the first signal is unreliable.

2. (original) The method for determining the speed of a transmission member as claimed in claim 1 wherein the transmission member comprises an output member.

3. (original) The method for determining the speed of a transmission member as claimed in claim 1 wherein the predetermined conditions which indicate that the first signal is unreliable include a) speed of the transmission member below a predetermined threshold, and b) loss of sensor output.

4. (canceled)

5. (currently amended) Method for determining the speed of a transmission member in a hybrid electric transmission including at least one electric motor, comprising:
providing as the speed of the transmission member a first speed signal calculated from at least one output from a redundant pair of rotation sensors operatively sensing rotation of the output member when either rotation sensor is providing an in-range output; and,
providing as the speed of the transmission member a second speed signal calculated from electrical phase information of said at least one electric motor and an effective rotation ratio between the preselected transmission member and said at least one electric motor when neither rotation sensor is providing an in-range output.

6. (original) The method as claimed in claim 5 wherein said rotation sensors comprise variable reluctance sensors, further comprising:
providing as the speed of the transmission member the second speed signal when output member speed is below a low-speed threshold.

7. (previously presented) Method for determining the speed of a transmission member in a hybrid electric powertrain, said powertrain including a hybrid transmission having at least one electric motor operatively coupled to said transmission member and at least one rotation sensor for operatively sensing rotation of said transmission member, comprising:
providing a first signal indicative of the speed of said transmission member calculated from the output from said at least one rotation sensor;
providing a second signal indicative of the speed of said transmission member calculated from electrical phase information of said at least one electric motor and an effective gear ratio between the transmission member and said at least one electric motor;
selecting as the speed of the transmission member said first signal when a first set of conditions are met; and
selecting as the speed of the transmission member said second signal when a second set of conditions are met.

8. (currently amended) Apparatus for determining speed of a transmission member in a hybrid electric powertrain, said transmission including at least one electric motor operatively coupled to said transmission member, comprising:
a sensor adapted to sense rotation of the transmission member and provide a sensor output signal therefrom;
a motor controller adapted to provide an electric motor speed signal from electrical phase information of said at least one electric motor; and,
a computer based transmission controller having program instructions adapted to:
calculate a first speed signal from the sensor output signal;
calculate a second speed signal from the electric motor speed signal and an effective rotation ratio between said at least one electric motor and the transmission member;
diagnose faults in the first and second speed signals; and
select as the speed of the transmission member the one of the first and second speed signals based on diagnosed faults.

9. (previously presented) The apparatus of claim 8 wherein the sensor comprises a variable reluctance sensor.

10. (previously presented) The method of claim 8 wherein the program instructions adapted to diagnose faults further includes program instructions adapted to identify whether there exists an in-range fault or a dropped or lost sensor output signal for the first speed signal.

11. (previously presented) The method of claim 8 wherein the program instructions adapted to diagnose faults further includes program instructions adapted to identify whether there exists an in-range fault or a dropped or lost sensor output signal for the second speed signal.